Ann. Natal Mus. Vol. 25(2) Pages 431–435 Pietermaritzburg October, 1983

Mediosetiger microcephala, a new genus and species of Ormiini from the Natal Drakensberg (Diptera: Tachinidae)

by

D. A. Barraclough
(Natal Museum, Pietermaritzburg, South Africa)

SYNOPSIS

Mediosetiger microcephala gen. n., sp. n. is described from the Giant's Castle Game Reserve in the Natal Drakensberg.

INTRODUCTION

The Ormiini is a small but unusual tribe of Tachininae. The tribe is unique amongst Tachinidae in having the prosternal area of the thorax much inflated. Hosts always seem to be nocturnally active Orthoptera, such as Acrididae and Tettigoniidae (Crosskey 1973).

Townsend (1931) and Van Emden (1945) placed the only two Afrotropical Ormiine genera, *Therobia* Brauer, 1862, and *Aulacephala* Macquart, 1851, in the Phasiinae, due to the presence of only one pair of post-intra-alar bristles in each genus. However, Malloch (1929, 1932) placed the same two genera in the Tachininae as Ormiini, giving weight to the inflated prosternal area character, an opinion which still prevails (Crosskey 1980).

This paper is devoted to the description of an unusual new Ormiine genus collected in the Drakensberg mountain range of Natal.

Genus **Mediosetiger** gen. n.

Derivation: *Medio* (L)—middle. *Setiger* (L)—bearing bristles.

Gender: Female.

Type species: *Mediosetiger microcephala* sp. n. by present designation.

Diagnosis: *M. microcephala* can be separated from the other two Afrotropical genera, by the following combination of characters: Ocelli present; parafacials narrower than both epistomal ridge and facial ridges, but broadening towards their upper ends and subequal in width with respect to the latter 2 areas just below lunula; at lunula, parafrontals less than half width of interfrontal area; head dichoptic; buccal cavity and mouthparts reduced; prosternal area inflated; propleuron bare; 3–4 distinct hypopleural setae, 1 + 1 *acr*, 1 *sa*; R_5 closed and petiole longer than *r–m*; bend of M smoothly curved; basal veins, R_1, *r–m*, *m–cu* and M_1 dark brown infuscated; discal setae on posterior margins of T3–T5.

Key to Afrotropical Ormiine genera

1 Ocelli absent and R_5 petiole, if present, shorter than *r–m* .... **Therobia**
– Ocelli present and R_5 petiole longer than *r–m* 2
2 Abdominal discal setae absent and propleuron haired........... **Aulacephala**
– Abdominal discal setae present and propleuron bare .... **Mediosetiger** gen. n.

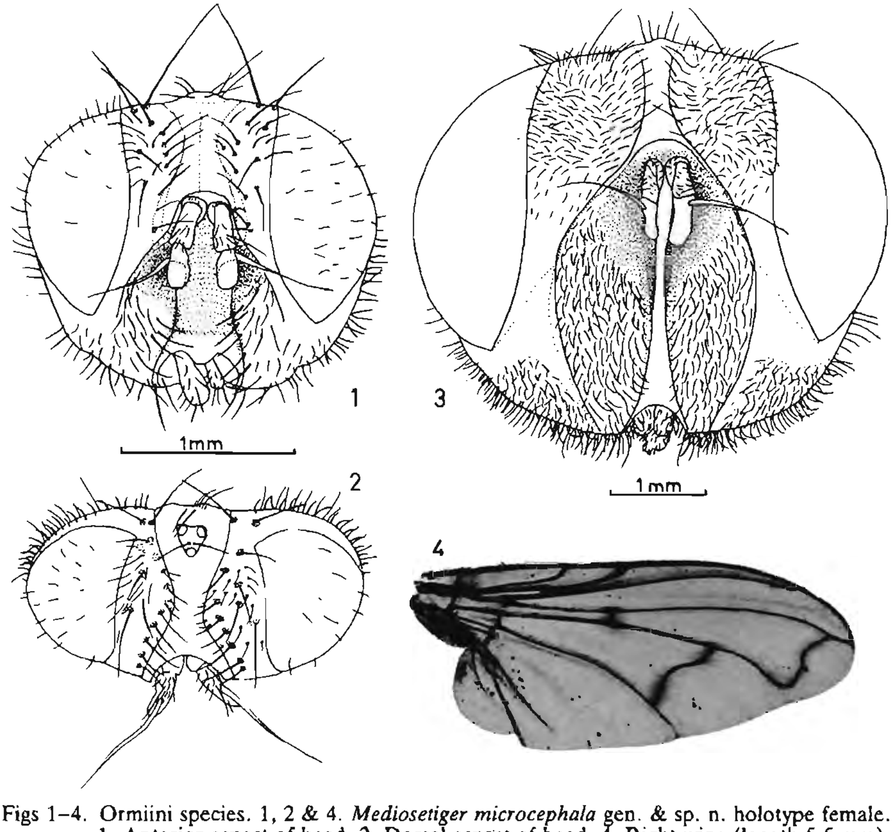
Mediosetiger microcephala sp. n.

Derivation: *Micro* (Gr)—small. *Cephalo* (Gr)—head.

Head: Eyes large, sparsely haired, dark brown. Eye height nearly 0,75 head height (both are maximum measurements). Head length (measured at antennal bases) equal to 0,61 head height. Dichoptic. Occiput slightly concave medially in upper half and on either side in lower half. Occiput paling from dark brown above to testaceous in lower two-thirds. Some occipital setulae in dark brown area behind upper part of postocular row. Below this point, postocular row broadens into a band of 3–5 setae that runs along occiput margin, through postbuccal area, to join peristomal area below. A similar row of setae occurs on facial ridges, below antennal apices. Although these setae never occupy full width of facial ridges, they occupy up to two-thirds of width just above buccal cavity margin, where they merge with peristomal setae. No distinct vibrissae. Buccal cavity wider than long: width about one-third distance between lower parts of eyes. Clypeus less than half width of epistoma. Proboscis testaceous, short and globular, about half length of antenna. Apically globular palps also testaceous, with setulae along their length. Epistomal ridge runs up through facial area to antennal bases, where it is about two-thirds its width at epistoma. Facial ridges merge with genal dilation and are subequal in width to the epistomal ridge up to antennal apices, where they become narrower and excavated below parafacials. Parafacials narrower than epistomal ridge and facial ridges, but broadening at their upper ends and subequal in width with respect to the latter 2 areas at the antennal bases. Gena and whole area below that bounded by lunula above and eyes on each side, testaceous. Antennal length one-third eye height. Antennal bases just above midpoint of eye. First and second antennal segments with dorsal setulae; 1 distinct seta on second segment. Third segment subequal in length to second, with evenly rounded apex and basal region ridged upwards and narrowed. All antennal segments testaceous. Aristae dark brown and bare; about 1,5 times longer than antennae and swollen in basal one-third. Parafrontals dark brown and irregularly covered in small setulae. Six to seven frontal setae descending down to level of second antennal segment, and 3 proclinate orbital setae on each side. One pair outwardly directed prevertical setae. Inner vertical setae converging and longer than diverging outer verticals. Ocellarium dark brown, with 3 distinct ocelli and proclinate ocellar setae. One pair of proclinate postocellar setae on the irregularly dark brown vertex, between inner vertical setae. Interfrontal area testaceous and broadened both anteriorly and posteriorly. Parafrontals less than half width of interfrontal at the most anterior point, and about 1,4 × interfrontal width halfway between lunula and ocellarium. Vertex about 0,4 maximum head width (Figs 1 & 2; compare Fig. 1 with Fig. 3).

Thorax: (Although some setae are missing, insertions are visible). Prosternal area inflated into bilobed structure, with hemispherical depression on each side. Propleuron with 2 setae: one long and strong above, the other short and weak below. Propleuron otherwise bare. Prostigmatic seta long and strong: longer than propleural seta. Humeral callus with 1 strong seta and 11–16 black setulae. Mesopleuron with 3–4 setae along posterior margin, with setulae along dorsal margin and in front of setae. One fairly distinct pteropleural seta, with 7–8 other weaker setae/setulae forming a cluster around it. One or 2 distinct *stpl*, surrounded by a number of hair-like setulae. Tufts of setae situated ventrally on each side, between fore and mid coxae. Three to four distinct hypopleural setae. No infrasquamal hairs. Halteres testaceous and sides of thorax mottled dark brown/testaceous, often with whitish pruinosity. Dorsal part of thorax dark brown and chaetation well developed: 2 *ntpl*, 1 *ph* and 1 presutural seta; 2 + 3 *dc* and 0 + 1 *ia* (posterior *ia* present); 1 + 1 *acr* (presuturals short and weak; postsuturals long and strong); 1 *sa* and 2 postalars. No visible *pra*. Three pairs marginal scutellar setae and 1 pair discal preapicals.

Legs: (Fore and mid legs missing on left-hand side). All legs wholly testaceous, as are pulvilli. Claw apices dark brown. Fore coxa setulose on much of inner surface.



Figs 1–4. Ormiini species. 1, 2 & 4. *Mediosetiger microcephala* gen. & sp. n. holotype female. 1. Anterior aspect of head. 2. Dorsal aspect of head. 4. Right wing (length 5,5 mm). 3. *Aulacephala maculithorax* Macquart, anterior aspect of female head.

Fore tibia with 1–2 *ad* setae and 2 *pd* setae. Mid coxa setulose posteriorly. Mid tibia as fore tibia. Hind coxa bare posteriorly. Hind tibia with 3 *ad* setae and 3 *pd* setae.

Wings: R_5 closed and petiole longer than *r–m*. *r–m* within apical half of discal cell. Bend of M smoothly curved and without an appendage. Distance from bend of M to wing margin subequal in length to *r–m*. M_1 with 1–2 exteriorly concave curves, with corresponding appendages. Distance from bend of M to *m–cu* subequal to distance between *m–cu* and *r–m*. Part of *m–cu* exteriorly concave. Cu_1 extension about two-thirds distance to wing margin. Two to three setulae on basal node of R_{4+5} (dorsally and ventrally). Veins testaceous, except at wing base, where they are dark brown infuscated, as are R_1, *r–m*, *m–cu* and M_1. Lower calypter the same colour as the wings. Smoothly rounded posterior margin, but inner posterior corner is noticeable. Wing (measured from humeral cross-vein) 5,5 mm long (Fig. 4).

Abdomen: Almost circular in outline. T1+2 shallowly excavated to near hind margin, where testaceous colour darkens to black. T3–5 blackish, mostly covered in pale yellow to white pruinosity. Distinct discal setae are present on posterior margins of T3–4. T5 has setae over most of its surface. A few distinct setae around apex of terminalia. Six visible sternites.

Total length: 5,8 mm.

Holotype: SOUTH AFRICA: *Natal:* 1 ♀, Giant's Castle Game Reserve (2929 Ad), 5800 ft., 18.x.1971, B. R. Stuckenberg & M. E. Irwin. Natal Museum Type No. NM–2580.

DISCUSSION

Mediosetiger is distinguishable from the two endemic Oriental Ormiine genera (*Homotrixa* Villeneuve and *Phasioormia* Townsend). *Homotrixa* has only a moderately inflated prosternal membrane (Crosskey 1973) and large vibrissae (Mesnil 1975), while *Phasioormia* has distinct vibrissae and antennal apices separated from the oral cavity by a distance less than the length of the antenna (Crosskey 1973). *M. microcephala* has its antennae about as long as the distance between their apices and the oral cavity. Mesnil (1975) indicates that *Plesiooestrus* Villeneuve occurs in the Palaearctic and Afrotropical regions and Australia. This genus is distinct from *Mediosetiger*, since it has no ocelli (Mesnil 1975). Crosskey (1977) and Van Emden (1945) consider *Plesiooestrus* Villeneuve to be synonymous with *Therobia* Brauer.

REFERENCES

CROSSKEY, R. W. 1973. A conspectus of the Tachinidae (Diptera) of Australia, including keys to supraspecific taxa and taxonomic and host catalogues. *Bull. Brit. Mus. (Nat. Hist.) Ent. Suppl.* **21**: 1–221.

——— 1977. Family Tachinidae. pp. 586–697. *In:* Delfinado, M. D. & Hardy, D. E. (eds.) *A catalog of the Diptera of the Oriental Region*. Vol. III. University Press of Hawaii, Honolulu.

——— 1980. Family Tachinidae. pp. 822–882. *In:* Crosskey. R. W. (ed.) *Catalogue of the Diptera of the Afrotropical Region*. British Museum (Natural History), London.

MALLOCH, J. R. 1929. Exotic Muscaridae (Diptera). XXIV. *Ann. Mag. nat. Hist.* (10) **3**: 249–280.

——— 1932. Exotic Muscaridae (Diptera). XXXVII. *Ann. Mag. nat. Hist.* **10** (10): 298–330.

MESNIL, L. 1975. 64g. Larvaevorinae (Tachininae). pp. 881–1435. *In:* Lindner, E. *Die Fliegen der Paläarktischen Region.* Bd.X.3. Schweizerbast'sche Verlagsbuchhandlung, Stuttgart.

TOWNSEND, C. H. T. 1931. Notes on Old-World Oestromuscoid Types. Part 1. *Ann. Mag. nat. Hist.* (10) **8**: 369–391.

VAN EMDEN, F. I. 1945. Keys to the Ethiopian Tachinidae. I. Phasiinae. *Proc. Zool. Soc. Lond.* **114**: 389–436.

Date received: 17 August 1982

Ann. Natal Mus. Vol. 25(2) Pages 437–440 Pietermaritzburg October, 1983

A new species of Ptychoptera (Diptera: Ptychopteridae) from Tongaland

by

B. R. Stuckenberg

(Natal Museum, Pietermaritzburg)

SYNOPSIS

Ptychoptera kosiensis sp. n. is described on specimens from a swamp-forest in the Kosi Lake area of Tongaland. It is closely related to *P. capensis* Alexander, a species occurring in montane forests in eastern South Africa.

The small nematocerous family Ptychopteridae is represented in Subsaharan Africa by five species which are distributed in the following way (Freeman 1952, Hutson 1980):

P. africana Alexander: Nigeria, Angola, Uganda, Zaïre
P. camerounensis Alexander: Cameroon
P. capensis Alexander: South Africa
P. matongoensis Alexander: Tanzania
P. uelensis Alexander: Zaïre, Zimbabwe, Uganda

Freeman (loc. cit.) refers to the generally similar appearance of *Ptychoptera* species and the variation in colour that led him to synonymise five other described Afrotropical species. He stresses the value of the male genitalia for specific identifications in this genus.

The only South African species known until now has been *P. capensis* Alexander, which is represented in the Natal Museum collection by specimens from a series of localities ranging from Barberton in the eastern Transvaal to Döhne in the eastern Cape Province. All these localities are montane with relatively high rainfall. My experience of collecting this species indicates that it prefers swampy or muddy places adjacent to or inside indigenous forest. Shaded pools with boggy, overgrown margins are especially suitable. Collecting records from Town Bush, Pietermaritzburg, reveal that the imaginal stage may occur throughout the summer.

The type-locality of *P. stuckenbergi* Alexander (a synonym of *P. uelensis*) is in the Inyanga Mountains of eastern Zimbabwe, so it also appears to be a montane species. Indeed, the records for all the Subsaharan *Ptychoptera* species show that montane forest (including gallery forest) is the preferred habitat, and my experiences of collecting *Ptychoptera* in Madagascar are that the species there similarly occur in such a habitat. It was thus unexpected when a new *Ptychoptera* was found recently in 'swamp-forest' close to sea-level on the coastal plain near Kosi Lake. The term 'swamp-forest' is used in that region for forest growing in shallow valleys along streams of low gradient, in which pools, soggy ground and a deep, rotting litter layer are typical. The specimens were collected from herbage in dense shade.

This new species contrasts obviously with *capensis* in being darker in both sexes, but the similarities in hypopygial structure show that they are in fact sister-species. Drawings by Freeman (loc. cit.) reveal that *uelensis* and *africana* are not related closely to these two. Freeman considers that *matongoensis* is possibly conspecific with *uelensis*. The relationships of *camerounensis* are indeterminate as only the female is known, but its colour pattern and occurrence on Mt Cameroon suggest that it is not closely related to the South African species. Freeman (op. cit., p. 42) notes that the dististyles of *capensis* are unlike those of other Subsaharan species, and most resemble those of the palaearctic *P. albimana* Fabricius.

Ptychoptera kosiensis sp. n.

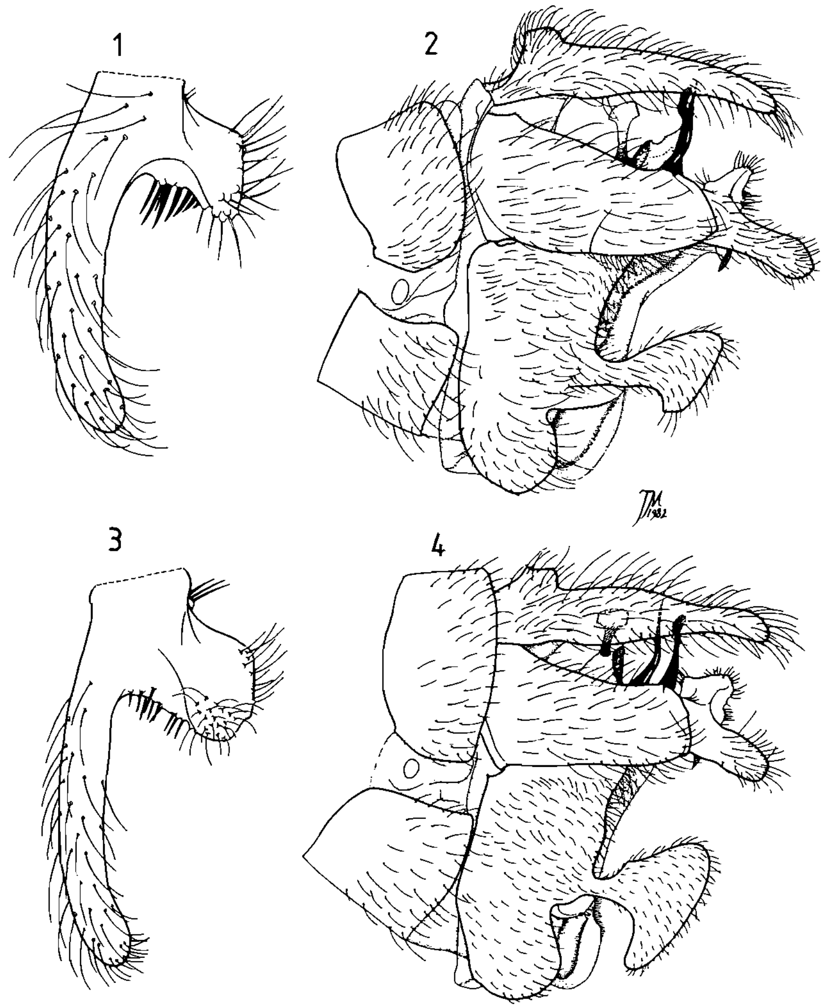
A species in which the male has a bicolorous thorax (dark mesonotum, paler pleura), and the abdomen brownish-orange with dark markings only on tergites 1, 2 (at apex), 5 and 6. The female is almost uniformly blackish-brown, with the wing patterned as in Fig. 5. Hypopygium very similar to that of *capensis*, but dististyles and projection from 9th tergite differ in shape.

♂ *Holotype:* Frons blackish-brown; clypeus yellowish-orange; scape dull pale yellowish, pedicel brownish; first flagellomere coloured like scape, others progressively darker brown. Mesonotum dark brownish-black, scutellum dull yellowish-brown. Pleura brownish-orange, coxae brownish; femora dull yellowish, apex narrowly darkened; tibiae and tarsi brownish. Postscutellum shining blackish-brown.

Abdomen: tergite 1 shining dark brown, 2 brownish-orange except darkened apical fifth, 3 and 4 brownish-orange except for narrowly darkened hind margins, 5 and 6 dark brown, hypopygium dull orange. Genitalia as in Figs 1–2; subpetiolate projection from tergite 9 relatively smaller, narrower, less strongly constricted basally, than in *capensis* (Fig. 4); dististyle (Fig. 1) finger-like, slightly curved, with basal extension on inner side that bears about 9 spine-like setae in a group (in *capensis*, Fig. 3, dististyle with basal projection of different shape and bearing much weaker setae). Wing membrane palely fumose, yellow-tinged in costal and subcostal cells; fork of R_{2+3} and R_{4+5} each surrounded by a brownish spot, a brownish cloud extending around cord; macrotrichia well developed in distal cells; veins dark brown. Wing length 7,9 mm.

♂ *Paratype:* Resembling holotype, slightly teneral and not as strongly coloured or as fully patterned on the abdomen. Frons thinly blackish-brown, in some positions almost concolorous with clypeus; mesonotum not uniformly dark, but obscurely reddish-brown in irregular patches; postscutellum concolorous with pleura, except for dark brown median vitta; abdomen brownish-orange except for median dark brown line of irregular width on tergite 1. Wing length 7,3 mm.

♀ *Paratype:* Obviously darker and more robust than male; entire thorax, and abdomen except cerci, blackish-brown, mesonotum especially dark; clypeus and cerci reddish-brown; femora dark yellowish-brown, short apical section darkened,



Figs 1–4. 1–2. *Ptychoptera kosiensis* sp. n. (1) dististyle, dorsal view; (2) hypopygium, lateral view. 3–4. *P. capensis* Alexander; (3) dististyle, dorsal view; (4) hypopygium, lateral view.

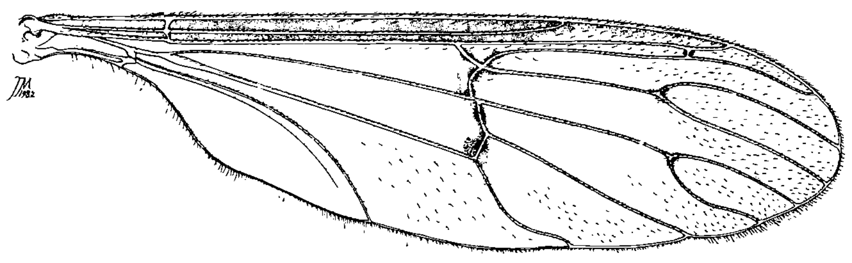


Fig. 5. *Ptychoptera kosiensis* sp. n., wing of female paratype.

legs otherwise dark brown; wing (Fig. 5), greyish-fumose, costal and subcostal cells yellowish-brown, a distinctive pattern of clear areas in the membrane as shown. Wing length 8,3 mm.

Material examined: Holotype ♂, 1 ♂ 1 ♀ paratypes: SOUTH AFRICA: *Natal*, Tongaland, Makaheli Forest, *c.* 5 km NE Mangusi (2632Dd), 30.xi–2.xii.1982; Barraclough, Londt, Stuckenberg. Natal Museum Type No. 2603.

Ptychoptera capensis Alexander

Ptychoptera capensis Alexander, 1917, *Ann. S. Afr. Mus.* **17:** 139.

This species shows relatively little colour variation. Several males in the Natal Museum are entirely pale orange except for irregular darkening apically on tergites 2–4, and dark brown over all of tergites 5 and 6; in addition, each femur is darkened over a short apical section. Evidently with increasing maturity the flies darken to a more reddish orange, and dark brown linings appear along the mesonotal suture and supra-alar edges. Some specimens have an irregular darkening transversely across the mesonotum in addition to more intense darkening of the lateral edges; one specimen has a dark brown median vitta that widens posteriorly then tapers rapidly and terminates before the posterior mesonotal margin. The abdominal pattern shows insignificant variation. The hypopygium is illustrated in Figs 3 and 4.

The female is similarly coloured, except that there is more extensive irregular darkening on tergites 3–5. The wing has no pattern of pale areas.

The type-locality of *capensis* is M'Fongosi in the Tugela River valley; probably the specimen was from the Qudeni Forest on the heights overlooking that part of the valley. Material in the Natal Museum collection is from the following localities: *Natal:* Pietermaritzburg, Town Bush (October, December, March, April); 17 km E Mooirivier, 20.ii.1983 (J. Manning). *Transvaal:* Barberton, Stentor, 23.viii.1924; Barberton, De Kaap, 19.iv.1920, (H. K. Munro). *Cape Province:* Döhne, 22.xi.1921, 21.xii.1921, H. K. Munro. In addition, I have also found the species at the Ngome Forest, Vryheid District, and in gallery forest near Eshowe, both places in Natal.

ACKNOWLEDGEMENTS

I am indebted to Mr John Manning for the drawings illustrating this paper. Accommodation at Kosi Lake was kindly provided by the Natal Parks Board. The Entomological Department of the Natal Museum undertakes field work with financial assistance from the Council for Scientific and Industrial Research.

REFERENCES

FREEMAN, P. 1959. Diptera: Culicidae (Dixinae), Anisopodidae and Ptychopteridae. *Ruwenzori Expedition* (1952), **2** (7): 39–42 *Brit. Mus.* (Nat Hist.), London.

HUTSON, A. M. 1980. Ptychopteridae. pp. 106–7. *In:* Crosskey, R. W. (ed). *Catalogue of the Diptera of the Afrotropical Region.* London: Brit. Mus. (Nat. Hist.).

Date received: 17 January 1983

Ann. Natal Mus. Vol. 25(2) Pages 441–448 Pietermaritzburg October, 1983

Afrotropical Asilidae (Diptera) 9. The genus Hippomachus Engel, 1927 (Asilinae: Asilini)

by

Jason G. H. Londt

(Natal Museum, Pietermaritzburg)

SYNOPSIS

The status of *Hippomachus* Engel, 1927, is discussed. Originally intended as a replacement name for the genus *Trichonotus* Loew, 1858, the name was first applied by Engel as a subgenus of *Neolophonotus* Engel, 1925. The four species now known to belong to this group are thought to be worthy of their own generic taxon and so *Hippomachus* is applied as a full genus. The four species are: *H. pegasus* (Loew)—the only species previously assigned to this group; *H. mivatus* (Walker)—transferred from *Neolophonotus* (but originally described as an *Asilus*); *H. hermanni* and *H. engeli*—two new species from east and southern Africa respectively.

INTRODUCTION

This is the fourth paper in a series dealing with what Oldroyd (1974) called the '*Neolophonotus*-group of genera'. So far I have dealt with *Dysclytus* (1979), *Synolcus* (1980) and *Dasophrys* (= *Hobbyus*) (1981). In addition to these genera Oldroyd (1974) lists only *Neolophonotus* itself as part of the group. Following Engel (1927), Oldroyd (1974) listed *Megadrillus* Bigot, *Lophopeltis* Engel, *Lophybus* Engel, *Hippomachus* Engel and *Neolophonotus* Engel as subgenera of *Neolophonotus*. My research on *Neolophonotus* (still to be published) leads me to believe that these subgeneric taxa have no value at all, except in the case of *Hippomachus*. I have, in this paper, indicated my reasons for accepting *Hippomachus* as a full genus.

MATERIAL AND METHODS

Morphological nomenclature follows McAlpine (1981). Wing length is measured from humeral cross-vein to tip, breadth through the first fork of the radial sector. Male genitalia were dissected from specimens, cleared in hot KOH and drawn with the aid of a drawing tube. Specimens studied are housed in the following museums: Natal Museum (NM), Pietermaritzburg; Naturhistoriska Riksmuseet (NRS), Stockholm; Zoologische Staatssammulung (ZSM), München; Muséum National d'Histoire Naturelle (MNP), Paris.

Hippomachus Engel, 1927

Trichonotus Loew, 1858: 365 (also 1860: 165). Type species: *T. pegasus* Loew, 1858 by monotypy.
Hippomachus Engel, 1927: 148. Replacement name for *Trichonotus*—preoccupied Schneider 1801. Applied by Engel as a subgenus.

Diagnosis: *Hippomachus* is characterised by the following combination of characters. Mesonotum with a well-defined narrow black mane; wing strongly dilated anteriorly in the male sex; vein M_3 not bulging forwards into discal cell as in *Synolcus*, but straight and almost parallel with M_{1+2} over entire length; cross-vein r–m positioned at a point at least three-quarters the way along the discal cell distally; vein R_4 with characteristic sinuous appearance, bulging forwards at mid-length; profile of face slightly convex as in *Dasophrys* but more obvious dorsally than ventrally (the opposite true of *Dasophrys*); ovipositor laterally compressed, and in lateral view about twice as long as wide.

Key to species of *Hippomachus*

Hippomachus species, like most species in the *Neolophonotus* group of genera, are characterised mainly on features of the male genitalia. It is therefore important to study these before making a final identification.

1 Ocellar setae black; postocular setae white; terga 3–5 with well-developed bristles on hind margin; ♂ genitalia as in Figs 8–11 ...... **mivatus** (Walker)

– Ocellar setae white; at least a few postocular setae black or brown; terga 3–5 with poorly developed marginal bristles 2

2 Bristles of ventral aspect of hind femora dark red-brown; ♂ genitalia as in Figs 16–18 .... **hermanni** sp. n.

– Bristles of ventral aspect of hind femora orange........................ 3

3 ♂ genitalia as in Figs 3–6. Style twice as long as gonocoxites.. **pegasus** (Loew)

♂ genitalia as in Figs 13–15. Style about as long as gonocoxites . **engeli** sp. n.

Hippomachus pegasus (Loew, 1858) Figs 1, 3–7

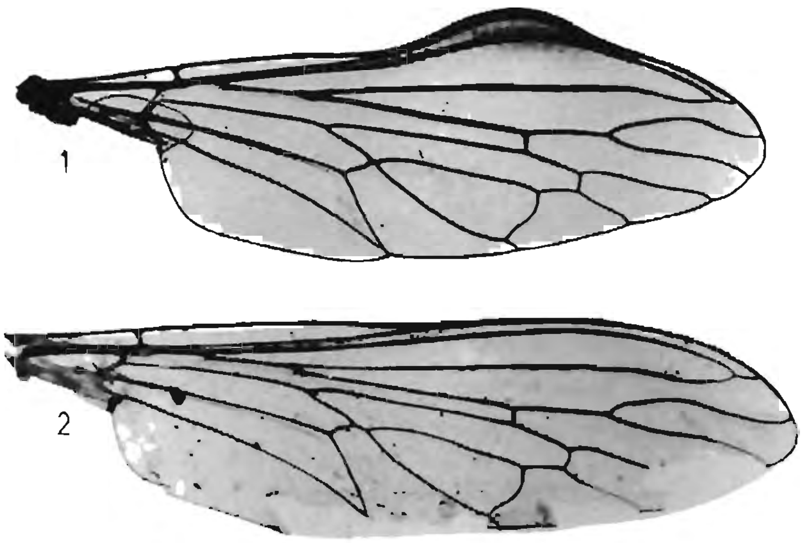
Trichonotus pegasus Loew, 1858: 365 (also 1860: 165).
Neolophonotus (Hippomachus) pegasus; Engel, 1927: 149.
Hippomachus pegasus; Hull, 1962: 521–3.
Neolophonotus pegasus; Oldroyd, 1980: 341.

H. pegasus was described by Loew (1858) and placed in its own genus *Trichonotus*. Engel (1927) discovered that *Trichonotus* was a junior homonym and provided the name *Hippomachus* as a replacement. He considered, however, that *Hippomachus* was a subgenus of *Neolophonotus*. This opinion was obviously not accepted by Hull (1962) who considered it a full genus. Oldroyd (1974) disregarded Hull and repeated Engel's suggestion although with apparent reservation. In 1980 Oldroyd was still undecided as to what to do with *pegasus* and placed the species under *Neolophonotus* pending further research. The only other author to mention *pegasus* was Efflatoun (1934) who recorded it from Egypt. I doubt this record and suggest that his specimen should be considered as a representative of *H. mivatus* (Walker). Although *pegasus* has been well described by Loew, Engel and Hull, I provide the following brief redescription for comparative purposes.

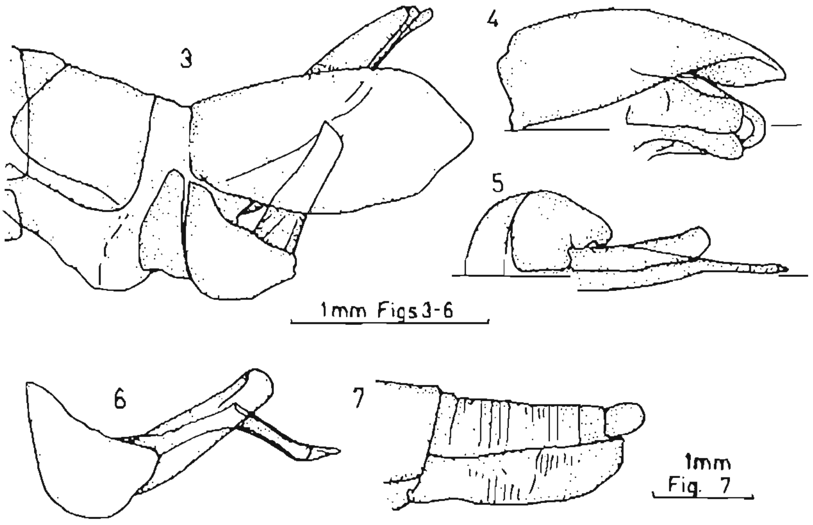
Redescription: Based on the holotype and two other specimens as listed below.

Head: Antenna dark red-brown with dark red-brown bristles and setae (a few white setae dorsally on segments 1 and 2). Mystax mainly white with dark red-brown setae mixed with white ones in dorsal half. Ocellar setae long fine white. Postocular bristles fine seta-like dark red-brown and white, proclinate.

Thorax: Mesonotum prominent with well-developed narrow dark red-brown mane which extends along entire length although it is weak posteriorly. Postpro-



Figs 1–2. *Hippomachus* species, wing. 1. *H. pegasus* Loew, holotype male. 2. *H. mivatus* (Walker), holotype female.



Figs 3–7. *Hippomachus pegasus* (Loew), genitalia. 3–6. Male, holotype. 3. Lateral. 4. Dorsal (excluding epandrial lobe). 5. Ventral. 6. Lateral aspect of gonocoxite, style and aedeagus. 7. Moremi female ovipositor (dry).

notal lobes with a good group of fine white setae. Two to three orange notopleural bristles; 1–2 dark red-brown or orange supra-alars; 1 orange postalar. Scutellum with about 8 thin white marginal bristles and a few white setae; disc with numerous white setae. Pleural setae fine long yellowish. Wing: 8,5 × 2,9 mm (holotype). ♂ wing dilated, ♀ wing undilated, in costal area. Venation (Fig. 1) dark brown. Legs: femora dark red-brown; tibiae orange-brown dorsally (less so on metathoracic legs), dark brown ventrally; tarsi dark red-brown; bristles mostly orange but there are a few dark red-brown ones as well.

Abdomen: Terga and sterna with long fine white setae (shorter and dark red-brown mid dorsally); hind margins of terga with fine thin poorly developed seta-like bristles. ♂ genitalia as in Figs 3–6. Styli longer than length of gonocoxites in lateral view. ♀ segments 7 and 8 shiny black, laterally compressed; segment 8 twice as long as wide in lateral view (Fig. 7).

Material examined: 1 ♂ holotype, bears no locality data, only four small labels as follows '63', '305', '$\frac{386}{80}$' and a green label 'Riksmuseum Stockholm' (NRS). SOUTH AFRICA: *Transvaal:* 1 ♂, Pietersburg, 11.ix.1915, H. K. Munro (NM). BOTSWANA: 1 ♀, Mbomba Island, Moremi Reserve, 20°17'E:19°11'S, A. Russell-Smith, 12.ix.1977, in sparse *Acacia nigrescens* woodland on game tracks, sandy soil (NM).

Remarks: Loew (1858) gave 'Caffraria (Wahlb)' as the locality data. Wahlberg collected in many parts of the western Transvaal not too far from Pietersburg where one of my specimens was found. I therefore designate Pietersburg as the type locality for *pegasus*.

Hippomachus mivatus (Walker, 1871) **comb n.** Figs 2, 8–12

Asilus mivatus Walker, 1871: 259.
Apoclea algira Efflatoun, 1934: 93 (nec Fabricius, 1794). Hull, 1962: 454.
Neolophonotus mivatus; Oldroyd, 1980: 341.

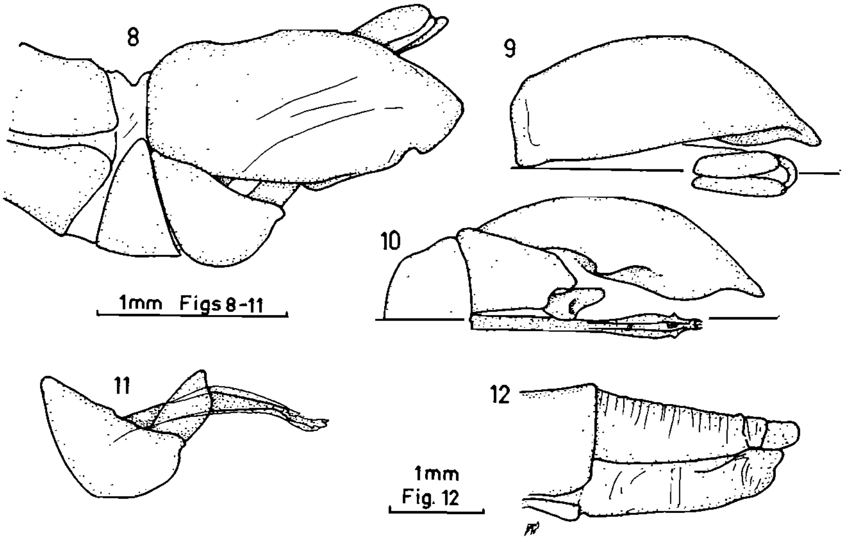
Walker (1871) described *mivatus* on a single female specimen from Egypt 'Tajura, Wâddy Nash'. For some reason unstated, Efflatoun (1934) placed this species (spelt *mivata*) as a synonym of *Apoclea algira* Fabricius. I have seen the type and can state with certainty that it is not an *Apoclea*. Hull (1962) accepted this synonymy while Oldroyd (1980) provisionally placed the species in the genus *Neolophonotus*. Although the type is in poor condition the wing is definitely that of a *Hippomachus*. I have seen a number of specimens from north-east Africa and believe that these are conspecific. Amongst these specimens are a few males which belong to *Hippomachus* but are distinct from *pegasus*. I therefore accept *mivatus* as a valid species of *Hippomachus* and provide the following brief description to supplement those of Walker (1871) and Efflatoun (1934) (who described the species under the name of *Hippomachus pegasus*). Redescription: Based on the holotype ♀ but supplemented with data from other material examined.

Head: Antenna similar to *pegasus*, bristles and setae of variable colour, predominantly blackish but there are usually some white ones as well. Mystax white with one or two black setae in extreme dorsal part. Ocellar setae dark red-brown. Postocular bristles white (yellowish in type), moderately well developed, proclinate.

Thorax: Similar to *pegasus* but mane may have white setae in posterior one-quarter. Postpronotal lobes with only a few fine white setae. Three to four notopleural bristles, 2–3 supra-alars, 1–3 (usually 2) postalars, all yellow-white. Scutellum with 8–10 white marginal bristles. Pleural setae white or yellow-white. Wing: Ranges from 5,6 × 1,7 (Quadda ♀) to 8,4 × 2,6 mm (holotype). Venation of holotype as in Fig. 2; male wing similar to *pegasus*. Legs: Dark red-brown but proximodorsal part of tibia yellow-brown; bristles predominantly yellow-white but there are a few dark red-brown ones on most segments.

Abdomen: Terga and sterna with moderately long white setae—no dark red-brown ones evident dorsally; terga with moderately well-developed white or yellow-white bristles along hind margin laterally. ♂ genitalia as in Figs 8–11, aedeagus with spiny projections laterally near tip. ♀ ovipositor (Fig. 12) similar to *pegasus*.

Material examined: EGYPT: 1 ♀ holotype, Tajura, Straits, Bab-el-Mendeb, J. H. Lord, Pres. R. Mandola (BMNH). DJIBOUTI: 1 ♂ (now defective), Djibouti, Maindron, 871–93 [1893] (MNP); 1 ♂, Djibouti, H. Coutiere, 1897 (MNP); 1 ♂ 1 ♀, Obock, Maindron, 871–93 (MNP); 3 ♀, Obok [= Obock], Jousseaume, 7–97 [1897] (MNP). CENTRAL AFRICAN EMPIRE (?): 2 ♀, Somalie Angl., Quadda, Jousseaume, 7.97 (MNP). KENYA: 1 ♂, Turkana, 20 km W. of Elige Springs, 03°16′N:35°50′E., 427 m, 6.vi.1980, B. Lamoral (NM). The localities of Tajura and Quadda are given as being in Libya and the Central African Empire in atlases consulted but there may be other places bearing these names which do not appear in my sources of reference. J. H. Lord apparently collected in Egypt and



Figs 8–12. *Hippomachus mivatus* (Walker), genitalia. 8–11. Obock male. 8. Lateral. 9. Dorsal. 10. Ventral. 11. Lateral aspect of gonocoxite, style and aedeagus. 12. Holotype female ovipositor (dry).

Arabia and so I assume Tajura is in Egypt. Quadda, according to the insect label, is in 'Somalie Angl.' (British Solaliland) which is part of present-day Somalia. I can find no such place in Somalia. The only place that I can find bearing this unusual name lies at 80°9'N:22°20'E in the Central African Empire some distance west of Somalia. It is possible that the label data are incorrect.

Remarks: *H. mivatus* is a widely distributed species which occurs in both the Afrotropical and Palaearctic Regions. While I have not seen the single male recorded by Efflatoun (1934) from Egypt (under *H. pegasus*) I am reasonably sure it must be conspecific with *mivatus*. The more important similarities being the black ocellar bristles and the form of the male genitalia. This Egyptian locality 'Gebel Alba (Wadi Kanssissrob) 29.i.1933, Farag Ayed' cited by Efflatoun could not be traced using sources available to me.

Hippomachus engeli sp. n. Figs 13–15

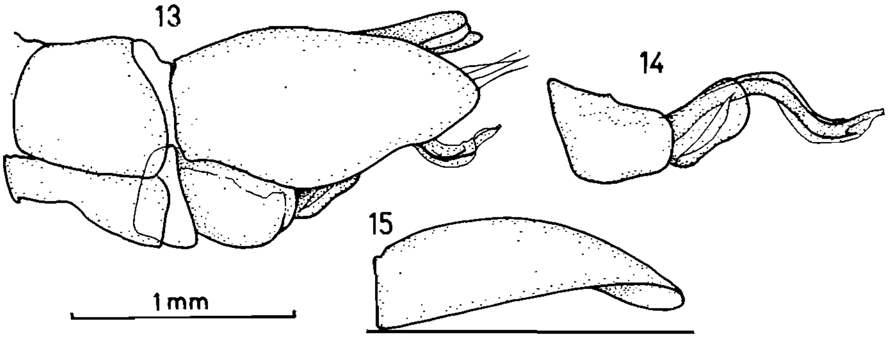
Named for Dr E. O. Engel in recognition of his pioneering work on this difficult group of Asilidae.

Description: Based on the unique holotype.

Head: Antenna similar to *pegasus*, bristles and setae of segments 1 and 2 entirely dark red-brown. Mystax similar to *pegasus*. Ocellar setae long, fine white as in *pegasus*. Postocular bristles fine dark red-brown, one or two yellow proclinate.

Thorax: Similar to *pegasus*. Dark red-brown setae of mane stop midway between transverse suture and scutoscutellar suture. Postpronotal lobes with a good group of fine white setae as in *pegasus*. Three notopleural bristles, 1 supra-alar, 1 postalar, all orange. Scutellum with white bristle-like setae on posterior margin (bristles and setae not clearly differentiated); disc with many white setae but there are a few dark brown ones centrally. Pleural setae fine yellowish as in *pegasus*. Wing: 8,3 × 2,7 mm. Venation as in *pegasus*. Legs: Femora dark red-brown, tibiae and tarsi orange-brown; bristles of femora mostly orange but with a few dark red-brown ones distally.

Abdomen: Similar to *pegasus*. ♂ genitalia as in Figs 13–15. Styli about as long as gonocoxites; aedeagus thickish and sinuose in lateral view.



Figs 13–15. *Hippomachus engeli* sp. n. holotype male genitalia. 13. Lateral. 14. Lateral aspect of gonocoxite, style and aedeagus. 15. Dorsal view of epandrial lobe.

Material examined: ZIMBABWE: 1 ♂ holotype, Druid Mine, Filabusi, S.R., 20.ix.1923, R. Stevenson (NM).

Remarks: This species is similar to *pegasus* but can be easily separated from *pegasus* on characters of the male genitalia. I have seen 2 ♀ from 'Niger, env. d'Agadès, Nov. 1938' in NMP which appear to be very similar to *engeli*. Until males are available their identity cannot be determined with certainty.

Hippomachus hermanni sp. n. Figs 16–18

Named for Prof. F. Hermann in recognition of his work on Afrotropical Asilidae.

Description: Based on the unique holotype.

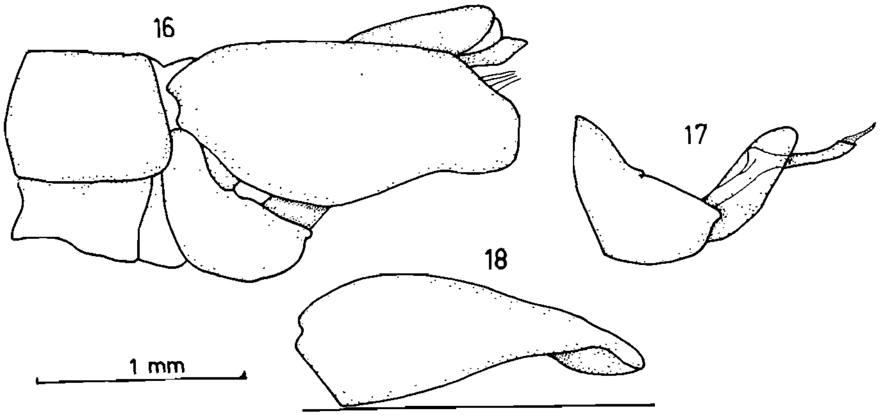
Head: Antenna similar to *pegasus* with dark red-brown setae on segments 1 and 2. Mystax white with some blackish setae dorsally and laterally on lower facial margin. Ocellar setae long thin white. Postocular bristles fine, mostly yellow but a few dark red-brown ones present, proclinate.

Thorax: Mesonotum as in *pegasus*; mane well developed extending almost to hind margin. Postpronotal lobes with long fine white setae. Three notopleural bristles, 1–2 supra-alars; 1–2 postalars, all brown-orange. Scutellum with *c.* 10 long yellow-white marginal bristles mixed with white setae; disc covered with longish white setae. Pleural setae mostly fine yellowish. Wing: 10,0 × 3,3 mm venation as in *pegasus*. Legs: Dark red-brown except for proximodorsal parts of tibiae which are brown-yellow; femora with dark red-brown bristles except for those laterally which are orange.

Abdomen: As in *pegasus*. ♂ genitalia as in Figs 16–18.

Material examined: 1 ♂ holotype, Africa occ. (ZSM). The specimen bears only a single pink label 'Africa occ. *Trichonotus pegasus* Loew', probably written by Dr Hermann.

Remarks: A species closely related to both *pegasus* and *engeli*, but demonstrating differences in male genital form which I consider to be specific.



Figs 16–18. *Hippomachus hermanni* sp. n. holotype male genitalia. 16. Lateral. 17. Lateral aspect of gonocixite, style and aedeagus. 18. Dorsal view of epandrial lobe.

DISCUSSION

Hippomachus is a widely distributed but poorly collected genus ranging between South Africa in the south, Egypt in the north, Somalia in the east and Niger in the west. Fewer than twenty specimens are known to me. Males are readily separated from males of *Neolophonotus* as they possess expanded wings similar to those found in the two southern African genera, *Dasophrys* and *Synolcus*. Both sexes do, however, look a lot like *Neolophonotus* in that they possess a well-developed mane, a feature lacking in *Dasophrys* and *Synolcus*. The female of *Hippomachus* possesses a laterally compressed ovipositor which is at least twice as long as broad and in this respect resembles females of *Dasophrys* and *Synolcus*. The male genitalia resemble the form found in *Dasophrys* in that the epandrial lobes are simple and the styli sometimes elongate; the aedeagus is, however, rather different. Virtually nothing is known about the preferred habitat of *Hippomachus* but, as it has been captured in areas known to be arid, it is likely that they live in dry sandy places like many *Neolophonotus* species.

ACKNOWLEDGEMENTS

I wish to thank Dr P. Inge Persson (RMS) and Dr F. Reiss (ZSM) for the loan of specimens and Dr L. Matile (MNP) and the staff of the Diptera section of the BMNH for their co-operation and hospitality during my visits to these museums. The financial support given to my research by the Council for Scientific and Industrial Research is gratefully acknowledged. Dr Brian Stuckenberg (NM) is thanked for his continued support of my work while Mrs Annette Seymour's technical assistance is also much appreciated.

REFERENCES

EFFLATOUN, H. C. 1934. A monograph of Egyptian Diptera. Part IV. Family Asilidae (Section 1) *Mém. Soc. r. ent. Egypte* **4**(2): 1–198.

ENGEL, E. O. 1927. Notes on some Asilidae of the South African region. *Ann. Transv. Mus.* **12**: 132–180.

HULL, F. M. 1962. Robber Flies of the world. The genera of the family Asilidae. *Bull. U.S. natn. Mus.* **224**(1): 1–430, (2): 431–907.

LOEW, H. 1858. Bidrag till kännedomen om Afrikas Diptera [part]. *Öfvers. K. VetenskAkad. Förh. Stockh.* **14** (1857): 337–383.

LONDT, J. G. H. 1979. The genus *Dysclytus* Loew (Diptera: Asilidae). *J. ent. Soc. sth. Afr.* **42**(2): 217–223.

——— 1980. The genus *Synolcus* Loew (Diptera: Asilidae). *J. ent. Soc. sth. Afr.* **43**(1): 23–40.

——— 1981. Afrotropical Asilidae (Diptera) 5. The genus *Dasophrys* Loew, 1858 (= *Hobbyus* Bromley, 1952) (Asilinae: Asilini). *Ann. Natal Mus.* **24**(2): 635–699.

McALPINE, J. F. 1981. *Manual of Nearctic Diptera*. Volume 1. Chapter 2. Morphology and terminology—Adults. Research Branch Agriculture Canada. Monograph No. 27. pp. 9–63.

OLDROYD, H. 1974. An introduction to the Robber Flies (Diptera: Asilidae) of southern Africa. *Ann. Natal Mus.* **22**(1): 1–171.

——— 1980. Asilidae. pp. 334–373. *In:* Crosskey, R. W. (ed). *Catalogue of the Diptera of the Afrotropical Region*. London: Brit. Mus. (Nat. Hist.).

WALKER, F. 1871. List of Diptera collected in Egypt and Arabia, by J. K. Lord, Esq., with descriptions of the species new to science. *Entomologist* **5**: 255–263.

Date received: 20 January 1983.